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| 10/529,782 | 03/30/2005 | Rainer Dyllick-Brenzinger | 268090US0PCT | 1490 |

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| EXAMINER | |
|---|---|
| WOODWARD, ANA LUCRECIA | |
| ART UNIT | PAPER NUMBER |
| 1796 | |

| NOTIFICATION DATE | DELIVERY MODE |
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| 01/14/2009 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/529,782 | DYLLICK-BRENZINGER ET AL. | |
| | Examiner | Art Unit | |
| | Ana L. Woodward | 1796 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *05 November 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *31-67* is/are pending in the application.

4a) Of the above claim(s) *61* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *31-60 and 62-67* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Election/Restrictions*

1. Newly submitted claim 61 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: it is directed to a method of using the product of claim 1 and would have been restricted if originally presented.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 61 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### *Claim Rejections - 35 USC § 112*

2. Claims 31-60 and 62-67 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification, as originally filed, fails to provide express support for the particle diameters of "5 nm" (claims 31 and 44). This appears to be contra to the disclosure that particle diameters "not less than 10 nm" should be used (specification, page 5, line 2, and page 10, line 5). Furthermore, no express support can be seen for "vinyl ethers" of C12-C22 alkyl acrylates (claim 35). Accordingly, said limitations are deemed new matter.

3. Claims 31- 60 and 62-67 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 33 and 46, it is unclear as to what is meant by "a surface-active agent".

In claims 35 and 47, it is unclear if or how the "nonpolymerizable hydrophobic compound" distinguishes over the alkyldiketene component of the composition.

In claims 36 and 48, it is unclear if or how the "water-insoluble monomer" distinguishes over the hydrophobic monomer of the composition. As presently recited, said monomer components read on one and the same entity. In this regard, it is noted that each monomer embraces the same monomer species, e.g., vinyl esters, vinyl ethers, alkyl acrylates, etc.

In claim 36, it is unclear as to what is meant by "vinyl ethers of C12-C22 alkyl acrylates".

In claim 37 and 49, line 2, it is unclear as to what is meant by a "binary or polynary" mixture.

In claims 37 and 49, line 2, it is unclear as to whether or not the "which comprises" limitation is qualifying only the antecedently recited "dispersion" and not also the recited "solution" and "binary or polynary mixture".

In claims 37 and 49, line 4, the Markush group defining the monomer is improper in format as per the absence of "selected from".

In claim 37, line 8, , it is unclear as to whether or not "at least one" is qualifying all the recited materials and not just the "hydrocarbon". Do applicants intend these materials as alternatives of each other?

In claim 37, no distinction can be seen between some of the species defining the second component and some of the species defining the third component. For example, no distinction can be seen between the "esters of monoethylenically unsaturated carboxylic acids of 3 to 5 carbon atoms and monohydric alcohols of 1 to 22 carbon atoms" (lines 5-6) defining the second

component and the "C12-C22 alkyl acrylates" (line 10) defining the third component. Also noted are the overlapping vinyl esters of C12 and C18 defining said second and third components.

In claim 37, last line, "and/or a mixture thereof" appears to be redundant given the "at least one" terminology.

In claim 51, there is no express antecedent basis for "the nonpolymerizable hydrophobic compound" per claim 45.

In claim 53, there is no express antecedent basis for the "surface-active agent".

In claim 57, it is unclear as to whether the "aqueous starch is definitive of the polysaccharide per claim 56.

In claim 58, it is unclear as to whether or not the "degraded starch in solution" is further defining the "aqueous starch" per claim 57 or another starch entity.

In claim 59, it is unclear as to whether or not the "water-soluble polysaccharide" is further defining the "aqueous starch" per claim 57 or another entity.

In claim 60, it is unclear as to whether or not the "degraded starch" is further defining the "aqueous starch" per claim 57 or another starch entity.

***Claim Rejections - 35 USC § 102/103***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 31-37, 44-49, 52 and 62-67 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Japanese 4100994 (XP-002268203).

The reference discloses the preparation of an alkyldiketene polymer aqueous dispersion obtained by aqueous emulsion polymerization of styrene, or its derivative, and acrylic monomer comprising the use of a high pressure emulsifier. A cationic water-soluble resin dispersant is employed. Specifically, it discloses producing the aqueous emulsion by emulsion polymerization of styrene, reading on the presently claimed hydrophobic monomer, and acrylic monomer, reading on the presently claimed hydrophilic monomer, using the dispersant of the cationic water-soluble resin.

The disclosure of the reference meets the requirement of the present claims in terms of the types of materials added. Given that the emulsion of the reference is emulsified with the aid of a high pressure apparatus, it is reasonably believed that particle sizes of not more than 500 nm of the organic phase, corresponding to that presently claimed, would be achieved. In this regard, it is noted that it is well known in the art that emulsification with the aid of a mechanical emulsification apparatus engenders small particle sizes of the organic phase. The onus is shifted to applicants to establish that the products of the present claims are not the same as or obvious from that set forth by the reference.

### *Claim Rejections - 35 USC § 103*

7. Claims 39-41, 50, 51, 54 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese 4100994 (XP-002268203) described hereinabove.

The selection of a specific alkylketene dimmer species would have been obvious to one having ordinary skill in the art from the general disclosure of the reference, absent evidence of unusual or unexpected results.

The reference discloses acrylic monomers meeting the presently claimed hydrophilic monomer. It would have been obvious to one having ordinary skill in the art to employ amounts of said monomer in accordance with the ultimate solubility desired for the resulting polymer.

### *Response to Arguments*

8. Applicant's arguments filed November 5, 2008 have been fully considered but they are not persuasive.

The disclosure of the reference meets the requirement of the present claims in terms of the types of materials added. Given that the emulsion of the reference is emulsified with the aid of a high pressure apparatus, it is reasonably believed that particle sizes of not more than 500 nm of the organic phase, corresponding to that presently claimed, would be achieved. In this regard, it is noted that it is well known in the art that emulsification with the aid of a mechanical emulsification apparatus engenders small particle sizes of the organic phase.

### *Conclusion*

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana L. Woodward whose telephone number is (571) 272-1082. The examiner can normally be reached on Monday-Friday (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ana L. Woodward/
Primary Examiner
Art Unit 1796